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REMARKS

Applicant wishes to thank the Examiner for the detailed remarks, the allowance of claim 33 and the allowability of claims 18, 22, 24-28, and 34. Claim 24 has been amended as suggested by the Examiner. Accordingly, claims 12-18 and 20-34 are pending.

Paragraph [00028], lines 11-18 were objected to under 35 U.S.C. §132(a) as new matter. The added section which the Examiner contends is new matter is reproduced below with support therefor from the originally-filed specification. Applicant respectfully requests reconsideration of the new matter objection.

> The generator is mechanically driven by torque driving transmission 8. As a result, the rotational speed of the generator is a fixed multiple of the speed of the driving gear in the gearbox and of the main rotor NP frequency. The electrical phase of the generator voltage is a fixed multiple of the generator rotational speed. Thus, the electrical voltage phase signal is a reflection of the NP frequency. As the rotor speed and NP frequency vary while in flight, the electrical voltage phase signal also varies and is perfectly slaved to i.e. a fixed multiple of the rotor speed. This fact makes the voltage signal a good reference signal that will exactly track rotor speed.
>
> *While the speed sensor 46 may be a dedicated unit for sensing rotor speed, the same information may be obtained from a transmission alternator or generator 60, shown in Figure 4, which turns at a predefined speed relative to the rotor speed. Hence, the controller 44 may use phase information from such devices to issue the appropriate control signals to the drive means 30 and to the field generation means 28.*
> [*original specification page 9, lines 8-13*]
>
> *7. The device according to claim 5 wherein*
> *said speed signals are provided by an electric power generator/alternator.*
> *[original filed claim 7]*

As stated in the original specification, "while the speed sensor 46 may be a dedicated unit for sensing rotor speed, the same information may be obtained from a transmission alternator or generator 60, shown in Figure 4, which turns at a predefined speed relative to the rotor speed."

That is, the first sentence "the generator is mechanically driven by torque driving transmission 8" is unquestionably supported by the originally-filed specification as well as being well known in the Rotary-wing aircraft art. See, for example, the Federal Aviation Administration Basic Helicopter Handbook: "The transmission system transmits engine power to the main rotor, tail rotor, generator, and other accessories." http://avstop.com/AC/BasicHelicopterHandbook/ch5.html; and United States patent No.: 6,672,538 *Transmission for a Coaxial Counter Rotating Rotor System* which is assigned to the assignee of the instant application.

The balance of the added section follows directly and is supported by the statement that "*the same information may be obtained from the transmission alternator or generator 60, shown in Figure 4, which turns at a predefined speed relative to the rotor speed*" and its equivalent in the added section the generator is mechanically driven by torque driving transmission 8." In other words, the balance of the added section discussed in detail what had already been disclosed in the originally-filed specification.

Since the generator is mechanically driven by the torque driving transmission 8, the generator must be driven at a fixed multiple of the torque driving transmission and the main rotor system. It then further follows that the electrical phase of the generator voltage is a fixed multiple of the generator rotational speed. Thus, by the transitive property, the electrical voltage phase signal is a reflection of the main rotor and NP frequency. Furthermore, as it is known that rotor speed and NP frequency vary in flight, the electrical voltage phase signal will also vary at it is perfectly slave to, i.e., a fixed multiple of the rotor speed making the voltage signal a good reference signal that will exactly track rotor speed. Again, this is supported by the original specification which states the controller may use phase information from such devices [*transmission alternator or generator 60*, shown in Figure 4, which turns at a predefined speed relative to the rotor speed] to issue the appropriate control signals to the drive means 30 and to the field generation means 28 or "*said speed signals are provided by an electrical power generator/alternator [originally-filed claim 7]*.

MPEP §706.03(o) recites that "new matter includes not only the addition of wholly unsupported subject matter, but may also include adding specific percentages or compounds after a broader original disclosure or even the omission of a step from a method. [See MPEP §608.04 to

§608.04(c). See *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) and MPEP §2163.05.] As discussed above, Applicant's added section is not ***wholly unsupported subject matter***, but merely an elaboration of that which will inherently follow from what has been unquestionably already disclosed in the original specification. Applicant respectfully requests reconsideration of this new matter rejection.

Claims 24, 28, and 34 were rejected under 35 USC §112, first paragraph. Applicant has amended claim 24 only to eliminate the phrase "load reducing" to directly correlate this limitation with that recited in claim 28. Accordingly, amended claim 24 and claim 28 are properly allowable under 35 U.S.C. §112.

Claims 28 and 34 were rejected based on the new matter rejection of the specification. However, as discussed above, the added section may not be properly considered new matter such that claims 28 and 34 are properly allowable.

With regard to rejected claim 34, allowed claim 18 includes the identical limitation "*a phase of the voltage from said generator providing a phase reference to said control system indicative of a rotational speed of the rotating system.*"

> Claim 34: The system as recited in claim 33, further comprising a generator driven by said main rotor system which powers said electric motor, *a phase of the voltage from said generator providing a phase reference to said control system indicative of a rotational speed of the said main rotor system.*
>
> Claim 18: The vibration isolation system as recited in claim 17, further comprising a generator which drives said electric motor, *a phase of the voltage from said generator providing a phase reference to said control system indicative of a rotational speed of the rotating system.*

The only difference between rejected claim 34 and allowed claim 18 is that claim 34 specifically recites "a generator driven by said main rotor system." This particular limitation is unquestionably shown in the original specification as well as in Figure 4. Accordingly, Applicant respectfully states that both claims 18 and 34 are properly allowable as presented. Applicant respectfully requests reconsideration of the new matter rejection as the proper allowance of the added section rectifies all of the 35 U.S.C. §112 concerns.

Claims 12-17, 20, 21, and 29-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Hooper* in view of *Case et al.* Applicant respectfully traverses these rejections as there is absolutely no teaching, suggestion, or motivation to modify *Hooper* in view of *Case* as proposed. *Hooper* discloses a mechanical vibration absorption system for a rotary wing aircraft or a propeller like device having a rotating hub and a plurality of radial members. [See *Hooper*, Col. 8, lines 49-55]. *Hooper* makes no mention of MRF, or the electromagnetic shifting of a MRF. ***The vibration absorption system of Hooper is completely based on a mechanical gear arrangement.*** There is therefore no motivation to incorporate a MRF fluid system of *Case* into a purely mechanical gear train system of *Hooper.* The only motivation to make the combination as proposed is by following the knowledge disclosed within the present invention. This is impermissible usage of hindsight in an attempt to recreate Applicant's device. Accordingly, the claims are properly allowable.

Furthermore, *Case* requires a fixturing mechanism 86 which may, for example, take the form of a collet 86, such as those used on lathes, mills, and the like with an outer ring 87 connected to a plurality of movable segments 88 that can be actuated inward to grip the shaft 20. Notably, the fixturing mechanism 86 is used to affix the interior opening 65 to the shaft 20. [0064-0065.] Notably further, the chamber 282 that contains the magnetic fluid 284 of housing 260 is attached to the shaft 20 through the use of the fixturing mechanism 86. [0092.] That is, the magnetic fluid 284 is mounted directly to the fixturing mechanism 86 which removably holds the shaft 20. Such an arrangement is completely inapplicable to the *Hooper* rotor system rotary wing aircraft which, of course, does not use a fixturing mechanism or a collet to removably hold a rotor shaft. That is, even the attachment arrangement of *Case* provides no benefit to *Hooper* because of the inherent differences between a rotary wing aircraft rotor system and a machine tool. It is axiomatic that an obviousness rejection must come from the suggestions or teachings of the references themselves. A proper suggestion or motivation to make a combination requires some benefit to result from the combination. When the additional teachings of the secondary reference do not provide any benefit to the arrangement disclosed in the primary reference, no prima facie case of obviousness exists. Because this combination provides no benefit and therefore is improper, there is no prima facie case of obviousness.

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Even if the combination of *Hooper* in view of *Case* were properly made – which it is not - there are differences between the claimed invention and the teachings of the cited references so that the combination does not meet the limitations of Applicant's claims. ***The Hooper vibration absorption system does not rotate independently of the rotor system.*** The *Hooper* system rotates only at a constant ratio with respect to the rotational speed of the rotor hub. [See *Hooper*, Col. 8, lines 64-66 and lines 70-73.] The Examiner admits that the *Case* housing rotates with the shaft 20 and does not rotate independently thereto. *Hooper* rotates at a constant speed ratio relative to the rotor system and *Case* rotates at a constant speed that is the same speed of the shaft. Thus, even if properly combinable – which they are not -- *Hooper* in view of *Case* cannot respond to varying flight regimes as disclosed and claimed by Applicant by providing an enclosed chamber which is ***rotatable independent*** of the rotating system. *[Also see Applicants specification ¶ 0035]* In either case, the combined references failure to disclose or suggest Applicant's claimed invention. The claims are properly allowable because the combination fails

Applicant respectfully submits that this case is in condition for allowance. If the Examiner believes that a teleconference will facilitate moving this case forward to being issued, Applicant's representative can be contacted at the number indicated below.

Respectfully Submitted,
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